

### **REMARKS**

Claims 1-27 are pending in this application. Claims 1-2 have been amended in several particulars for purposes of clarity and brevity that are unrelated to patentability and prior art rejections while Claims 11-27 have been newly added in accordance with current Office policy, to further and alternatively define Applicants' disclosed invention and to assist the Examiner to expedite compact prosecution of the instant application.

As a preliminary matter, the related art references cited in the background of Applicants' disclosure are proper for the Examiner's consideration. Nevertheless, for purposes of completeness, those references are submitted in an IDS statement along with PTO Form 1449 for the Examiner's consideration and entry.

Claims 4-8 have been conditionally allowed if rewritten in independent form to include all of the limitations of their respective base claim 1. The Examiner's indication of allowability of these claims is noted with appreciation. Claims 11-15 have been newly added to capture the subject matter of claims 4-8 for allowance. Separately, claims 16-27 have also been added to alternatively define Applicants' disclosed invention over the cited prior art of record. These newly formulated claims 11-27 are believed to be in condition for allowance. As for claims 4-8, forbearance is respectfully requested pending Applicants' traversal of the outstanding rejection of parent claim 1.

Claims 1-3 and 10 have been rejected under 35 U.S.C. §102(e) as being anticipated by Tanaka et al., U.S. Patent No. 6,608,739 for reasons stated on pages 3-4 of the Office Action (Paper No. 3). The rejection is respectfully traversed, however. Applicants submit that the features of Applicants' claims 1-3 and 10 are

not disclosed or suggested by Tanaka '739. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection for the following reasons.

First of all, base claims 1 and 2 have been amended, for purposes of expedition, to clarify such that the magnetization of the single magnetic domain turning ferromagnetic layer (element 45, as shown in FIG. 1 and FIG. 2, for example) is effectively pinned, that is, "the single magnetic domain turning ferromagnetic layer has effectively fixed magnetization in the direction of substantially perpendicular to an external magnetic field from a magnetic medium." As amended, the rejection of Applicants' base claims 1-2 should be deemed moot. This is because Tanaka '739 discloses a spin valve thin film magnetic head, as shown in FIG. 1 and FIG. 10, in which the direction of the polarization of the ferromagnetic pinned layer is a Y-direction, that is, the direction parallel to the magnetic field from a magnetic [recording] medium.

Nevertheless, to the extent that the rejection may still be applicable, Applicants submit that base claims 1 and 2 define a magnetic head provided with features that are not disclosed in Takana '739. Specifically, base claim 1 defines a magnetic head provided with a spin-valve type magnetoresistive element in which, *inter alia*, a single magnetic domain turning ferromagnetic layer is formed on a soft magnetic free layer, via a non-magnetic separating layer, and turns the soft magnetic free layer a single magnetic domain so that the soft magnetic free layer has magnetization substantially induced in a direction substantially perpendicular to an external magnetic field because the soft magnetic free layer and the single magnetic domain turning ferromagnetic layer are magnetostatically coupled, via the non-

magnetic separating layer, at the end of track width". Likewise, base claim 2 further defines a ferromagnetic pinned layer in which, *inter alia*, "a direction of the magnetization of the ferromagnetic induced layer is substantially pinned for an external magnetic field."

In contrast to Applicants' base claims 1 and 2, Tanaka '739 discloses a magnetoresistive element having a magnetic coupled free layer, as shown in FIG. 1 and FIG. 10, in which "a free magnetic layer 11 comprises a nonmagnetic intermediate layer 9, and first and second free magnetic layers 10 and 8 with the nonmagnetic intermediate layer" (see col. 18, lines 11-12) and "when the magnetization direction of the free magnetic layer 11, which is oriented in the X1 direction, is changed by a leakage magnetic field from a recording medium" See col. 19, lines 20-28 of Tanaka '739. This indicates that the first magnetic layer 10 is simply on part of the free magnetic layer, rotatable with a leakage magnetic field.

This is in contrast to Applicants' base claims 1 and 2, in which "the single magnetic domain turning ferromagnetic layer" (45, as shown in FIGs. 1-2, for example) has "applying exchange coupling" (see Fig. 1) or "setting the magnetization of track width for and external magnetic field and disturbance (Fig. 2)", so the magnetization of the single magnetic domain turning ferromagnetic layer 45 is effectively pinned

The rule under 35 U.S.C. §102 is well settled that anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. In re Paulsen, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); In re Spada, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Those elements must either be inherent or disclosed expressly and must be arranged as in the claim.

Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989); Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 7 USPQ2d 1057 (Fed. Cir. 1988); Verdegall Bros., Inc. v. Union Oil Co., 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). The corollary of that rule is that absence from the reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 230 USPQ2d 81 (Fed. Cir. 1986).

The burden of establishing a basis for denying patentability of a claimed invention rests upon the Examiner. The limitations required by the claims cannot be ignored. See In re Wilson, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970). All claim limitations, including those which are functional, must be considered. See In re Oelrich, 666 F.2d 578, 212 USPQ 323 (CCPA 1981). Hence, all words in a claim must be considered in deciding the patentability of that claim against the prior art. Each word in a claim must be given its proper meaning, as construed by a person skilled in the art. Where required to determine the scope of a recited term, the disclosure may be used. See In re Barr, 444 F.2d 588, 170 USPQ 330 (CCPA 1971).

In the present situation, Tanaka '739 fails to disclose and suggest key features of Applicants' claims 1-2. Therefore, Applicants respectfully request that the rejection of Applicants' base claims 1-2 and its dependent claims 3 and 10 be withdrawn.

Lastly claim 9 has been rejected under 35 U.S.C. §103 as being unpatentable over Tanaka '739, as applied to claim 1 above, and further in view of Hayashi, U.S. Patent No. 6,456,468. In support of this rejection, the Examiner asserts that Tanaka '739 discloses all features of Applicants' claim 9, except for "the non-magnetic

separating layer 9 being made of Ta, Hf, Nb, Ti or W or the oxide of any of these" which is alleged disclosed on col. 6, lines 43-46 of Hayashi '468. However, this assertion is incorrect, since Hayashi '468 describes that the non-magnetic layer is disposed between the base layer and the antiferromagnetic layer so as to prevent peeling. In contrast to Hayashi '468, Applicants' claim 9 requires that the non-magnetic separating layer 411 is disposed between the soft magnetic free layer 18 and the ferromagnetic layer 413. In view of the foregoing distinctions, Applicants respectfully request that the rejection of claim 9 be withdrawn.

Claims 11-27 have been newly added to alternatively define Applicants' disclosed invention over the prior art of record. These claims are believed to be allowable at least for the same reasons discussed against all the outstanding rejections of the instant application.

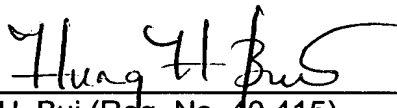
In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC area office at (703) 312-6600. Applicants respectfully reserve all rights to file subsequent related application(s) (including reissue applications) directed to any or all previously claimed limitations/features which have been amended or canceled, or to any or all limitations/features not yet claimed, i.e., Applicants have no intention or desire to dedicate or surrender any limitations/features of the disclosed invention to the public.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage of fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli,

Terry, Stout & Kraus, No. 01-2135 (Application No. 520.41222X00), and please credit any excess fees to said deposit account.

Respectfully submitted,

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